UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS

CISCO SYSTEMS, INC., Plaintiff, v. INNOVATIVE WIRELESS SOLUTIONS, LLC, Defendant.	Civil Action No. 1:13-cv-00492-LY JURY TRIAL DEMANDED

PLAINTIFFS CISCO SYSTEMS, INC.'S AND DEFENDANT INNOVATIVE WIRELESS SOLUTIONS, LLC'S JOINT CLAIM CONSTRUCTION STATEMENT

Pursuant to paragraph 6 of the Joint Scheduling Order (Dkt. No. 33) and the Order Granting the Joint Motion for Extension of Time (Dkt. No. 35), Plaintiff Cisco Systems, Inc., ("Plaintiff" or "Cisco") and Defendant Innovative Wireless Solutions, LLC, ("Defendant" or "IWS") hereby submits this Joint Claim Construction Statement regarding the construction of terms in the asserted claims of U.S. Patent Nos. 5,921,895; 6,327,264; and 6,587,473 for the above-captioned matter.

I. CONSTRUCTIONS OF THOSE TERMS UPON WHICH THE PARTIES AGREE

The parties have not identified terms on which they agree at this time, but the parties have reduced the number of terms initially proposed through the meet-and-confer process.

II. EACH PARTY'S PROPOSED CONSTRUCTION OF EACH DISPUTED TERM

The parties proposed constructions and identification of intrinsic and extrinsic evidence is attached hereto as Exhibit A.

III. EACH PARTY'S IDENTIFICATION OF WITNESSES TO BE CALLED AT THE CLAIM CONSTRUCTION HEARING

Plaintiff and Defendant reserve their right to call witnesses at the claim construction hearing to the extent the Court permits it, subject to reasonable notice to the other party.

Respectfully submitted,

Dated: January 13, 2014

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CERTIFICATE OF SERVICE

I hereby certify that on January 13, 1014, I electronically filed the foregoing using the Case Management/Electronic Case Filing ("CM/ECF") system, which will send a notice of electronic filing to all counsel record.

/s/ Matthew S. Yungwirth
Matthew S. Yungwirth

EXHIBIT A

Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
"CSMA/CD"	1, 6, 7, 15, 16, 27-37, 40, 48, 51-53	5, 8	1, 10, 11, 17, 18, 25, 26, 30, 32, 33, 35, 39-42	Plaintiffs contend that no construction is necessary. The acronym "CSMA/CD" is defined in the claims and specification as "Carrier Sense Multiple Access with Collision Detection." This is an established protocol that is more appropriately explained by the parties' experts than through a claim construction. Furthermore, IWS' proposed construction does not accurately capture the meaning of "Carrier Sense Multiple Access with Collision Detection" and should not be adopted by the Court.		"CSMA/CD": Techniques compatible with connecting to networks such as Ethernet networks, where a device that wishes to transmit on the network listens and checks to see if the channel is free for sending data. If the channel is not free, or if a collision is detected during transmission, the device waits for a small amount of time and tries again.	'895 Patent[2]: *See, e.g.,* 1:32-54 ("The 802.3 Standard is based on the 1985 Version 2 Standard for Ethernet and, although there are some differences including different use of a length/type field, the two Standards are largely interchangeable and can be considered equivalent as far as this invention is concerned. *The term 'CSMA/CD' is used herein to refer generically to this technology.* Using CSMA/CD, packets of data are communicated in frames that are generally referred to

[1] The references to figures and specification excerpts refer to the '895 Patent.

[2] Citations to the '895 Patent are exemplary of citations to the corresponding sections of all of the other patents in suit which share a common or substantially identical specification.

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Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
							as Ethernet frames. This term is also used herein, regardless of whether the frames comply with the 802.3 Standard or the Ethernet Standard (i.e. regardless of the value contained in the length/type field of the frame).") (emphasis added). Extrinsic: *See, e.g.,* 802.3 Standard at 13. *See, e.g.,* IEEE Glossary of Networking Terminology § 3.110.
"CSMA/CD interface"	1, 6, 7, 15, 16, 27-37, 40, 48, 51-53	5, 8	1, 10, 25, 26, 30, 35, 39-42	an interface to a CSMA/CD path or terminal device	FIG. 7; col. 11, lines 1-13; col. 6, lines 23-25; col 3, lines 34-46.[3]	IWS contends that the plain and ordinary meaning in the field governs the construction of this term. Moreover, this phrase	'895 Patent: *See, e.g.,* 1:32-54, 6:6-13.

[3] **PLAINTIFF'S STATEMENT:** Defendant's support includes citations to what has been identified as "Rebuttal Evidence," which was provided to plaintiffs for the first time just prior to the close of business today. Plaintiffs noted their objection to this late disclosure, which they believes is contrary to what the parties had previously agreed to. Therefore, Plaintiffs reserve their right to supplement the Joint Claim Construction Statement to add rebuttal evidence to the extent necessary upon review of defendant's opening claim construction brief.
DEFENDANT'S STATEMENT: Both Plaintiffs and Defendant have expressly acknowledged their right to rely on rebuttal evidence to

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Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
						should not be construed in its entirety as proposed by Plaintiffs because an ordinary juror can understand the word "interface." For the purposes of jury comprehension, IWS proposes the following construction: "CSMA/CD": See above[4]	Extrinsic: *See, e.g.,* 802.3 Standard at 13. *See, e.g.,* IEEE Glossary of Networking Terminology § 3.110. **Rebuttal Evidence:** '895 Patent: *See, e.g.,* FIG. 3, 9:52-10:5
"bidirectional communications path"	1	5, 7, 8	1, 3, 4, 7-9, 11, 15, 17-19, 22-24, 26, 30-35, 37, 38, 40,	a wired communications path for exchanging information between two endpoints	FIGs. 1, 3, 4, 7, 8, 15; col. 7, lines 1-18; col. 8, lines 26-63; col. 9, lines 8-12 and line 32 – col. 10, line 57; col. 11, line 1 –	IWS contends that the plain and ordinary meaning in the field governs the construction of these terms. Moreover, these phrases should not be construed in their entirety as proposed by Plaintiffs because an	'895 Patent: *See, e.g.,* 2:33-48("It is known to provide for access to the Network from a relatively distant terminal device, or

rebut the other party's proposed claim constructions and evidence. Defendant proposed setting a date with Plaintiffs for simultaneous exchange of rebuttal evidence prior to the filing of the claim construction statement, but Plaintiffs refused. Defendant has included this evidence in this statement because withholding such rebuttal evidence until briefing would be a disservice to the parties, the Court, and the claim construction process and would invite unfair surprise in the briefing process.

[4] Where Defendant cites previously proposed constructions of words or phrases using "see above," Defendant is also relying on and citing the evidence identified above associated with the previously proposed constructions as if it were fully incorporated therein.

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Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
"communications path"	1, 3-12, 15, 17-20, 27-37, 40, 48, 49, 51-53	5, 6, 8, 9	42 41		col. 12, line 17; col. 13, lines 35-4; col. 1, lines 6-10.	ordinary juror can understand the ordinary English words and grammar in them. Rather, only words or terms that an ordinary juror could not understand should be construed. If the Court believes a construction of "bidirectional" is necessary for the purposes of jury comprehension, then IWS proposes: "bidirectional" / "bidirectionally": Capable of transmission in either or both directions.	TD, via a communications path between a router on the Network and the distant TD, the communications path *typically* being constituted by a telephone line. *A simple form* of such a communications path is a serial link comprising modem communications via a conventional two-wire telephone line.) (emphasis added), 3:50-54, 5:2-9, and 12:42-45. Extrinsic: *See, e.g.,* IEEE Glossary of Networking Terminology § 3.167. http://www.merriam-webster.com/dictionary/bidirectional **Rebuttal Evidence:**

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Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
							'895 Patent: *See, e.g.,* 7:1-18 ("FIG. 1 illustrates elements of *a known arrangement* for access from a subscriber to the Network…") (emphasis added); 8:48-51, 11:1-3 ("FIG. 7 illustrates *a form* of the master modem 34, including optional but desirable multiplexing for a plurality of two-wire lines.") (emphasis added); 14:26-31; and 20:66-21:2. Claims: '895 Patent claim 13 at 22:24-33; claim 21 at 23:1-10 ; claim 23 at 23:16-26; claim 25 at 23:32-41; claim 42 at 25:2-24; and claim 56 at 26:51-27:6. '264 Patent claim 1 at 19:7-36 and claim 3

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Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
							at 19:41-20:7. '473 Patent claim 6 at 20:12-13 ("A method as in claim 1, wherein the bidirectional communications path comprises a two-wire line"); claim 21 at 22:13-15; claim 27 at 23:12-13; and claim 28 at 23:14-19.
"enveloping information packets in information frames" "enveloping information corresponding to at least one of the […] information packets in at least one […] information frame"	3		2, 12, 36	encapsulating intact Ethernet frames containing information packets in information frames encapsulating an intact Ethernet frame containing at least one information packet in one information frame	FIGs. 9, 10; col. 9, lines 31-51; col. 12, line 43 – col. 13, line 34.	IWS objects to Plaintiffs' proposed terms for construction because Plaintiffs' proposal to construe ordinary English language and grammar would improperly rewrite the claims. Moreover, Plaintiffs' proposal of construing a term containing ellipses would improperly rewrite the language of the claims and disregard the omitted context and phrasing. IWS contends that the plain and ordinary meaning in the field governs the construction of these terms.	'895 Patent: *See, e.g.,* Figs. 2, 9, 10, and 11; 1:26-45("…Using CSMA/CD, *packets of data are communicated in frames* that are generally referred to as Ethernet frames….") (emphasis added), 3:57-61("…*The information packets can be communicated by enveloping them in information frames* ….") (emphasis added), and 7:44-65.

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Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
						Moreover, these phrases should not be construed in their entirety as proposed by Plaintiffs. Rather, only words or terms that an ordinary juror could not understand should be construed. For the purposes of jury comprehension, IWS proposes the following constructions: "information packets": A unit of data for transmission over networks of some finite size and which may be transmitted over a network by being enveloped in one or more frames. "information frames": *See* above.	Extrinsic: *See, e.g.,* IEEE Glossary of Hardware Terminology § 3.1566. **Rebuttal Evidence:** '895 Patent: *See, e.g.,* 8:48-9:51("Communications between the master modem 34 and the slave modem 32 are carried out in accordance with a new point-to-point protocol which uses collision avoidance to communicate Ethernet frames between the modems…") (emphasis added); 13:14-18 ("*Alternatively, as illustrated in FIG. 10, the preamble and SFD fields can be stripped from the*

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							Ethernet frame and only the remainder of the Ethernet frame (i.e. the data packet and FCS field) incorporated.") (emphasis added); and 14:1-7. Claims: '895 Patent claim 7 at 21:64-67 and claim 8 at 22:1-4. '473 Patent claim 18 at 21:62-67, claim 19 at 22:1-6, claim 33 at 24:17-22, and claim 34 at 24:23-28.

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Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
"control information"	1, 4, 5, 48	5, 8	1, 11, 14, 16, 26, 30, 31, 35	information provided in a data or control frame by the [master modem/first end/first modem/control unit/control unit of the first unit/another apparatus] that dictates when information can be communicated over the communications path	FIG. 11; col. 12, lines 42-63; col. 13, line 43 – col. 14, line 7; col. 14, lines 37-65.	IWS contends that the plain and ordinary meaning in the field governs the construction of this term. Moreover, this phrase should not be construed because an ordinary juror can understand all of the words in it, which are ordinary words in the English language.	**Rebuttal Evidence:** '895 Patent: *See, e.g.,* 3:54-57; 5:33-39; 14:8-20 ("The following description of *an example* of the collision avoidance protocol, with reference to FIGS. 12 to 14, assumes for simplicity and clarity that the master modem 34 *typically* sends s single data frame followed by a control frame downstream, and then waits for a response from the slave modem 32, and that the slave modem waits for these downstream frames and then *typically* sends a response frame followed by s single data frame upstream. It also assumes for simplicity that there

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Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
							is only one slave modem 32 connected to the line 12. Various modifications and extensions of this protocol, for example to accommodate multiple slave modems 32 connected to the same line 12, can be contemplated and some variations are described later below.") (emphasis added); and 14:51-65 ("control information, such as operating parameters for the slave modem.").
"supplying information packets … to the communications path in dependence upon	1			providing information packets to the communications path under control of and in response to received control information	Col. 14, line 8 – col. 15, line 13; col. 15, lines 22-41.[5]	IWS objects to Plaintiffs' proposed term for construction because Plaintiffs' proposal to construe ordinary English language and grammar	**Rebuttal Evidence:** '895 Patent: *See, e.g.,* Abstract; 4:21-28; 12:49-52;

[5] Throughout this Exhibit, where a claim term or phrase incorporates a term or phrase for which a construction is separately provided, Plaintiffs incorporate by reference all supporting citations into its support for the construction of current claim term or phrase.

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Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
the control information"						would improperly rewrite the claims. Moreover, Plaintiffs' proposal of construing a term containing ellipses would improperly rewrite the language of the claims and disregard the omitted context and phrasing. IWS contends that the plain and ordinary meaning in the field governs the construction of this term. Moreover, this phrase should not be construed in its entirety as proposed by Plaintiffs. Rather, only words or terms that an ordinary juror could not understand should be construed. For the purposes of jury comprehension, IWS proposes the following construction: "information packets": *See* above.	14:8-20 ("The following description of *an example* of the collision avoidance protocol, with reference to FIGS. 12 to 14, assumes for simplicity and clarity that the master modem 34 *typically* sends s single data frame followed by a control frame downstream, and then waits for a response from the slave modem 32, and that the slave modem waits for these downstream frames and then *typically* sends a response frame followed by s single data frame upstream. It also assumes for simplicity that there is only one slave modem 32 connected to the line 12. Various modifications and extensions of this

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							protocol, for example to accommodate multiple slave modems 32 connected to the same line 12, can be contemplated and some variations are described later below.") (emphasis added); 17:28-44; and 20:15-26.
"wherein the control information and the dependence on the control information . . . are arranged to avoid collisions . . . between information packets communicated from the first buffer to the second buffer and information packets communicated from the third buffer to the	1			wherein information packets from the third buffer are supplied to the communications path only in response to control information so that a communication from the third buffer to the fourth buffer cannot occur when a communication from the first buffer to the second buffer is present on the communications path	FIG. 11; col. 13, line 43 – col. 14, line 7; col. 14, line 37 – col. 16, line 39.	IWS objects to Plaintiffs' proposed term for construction because Plaintiffs' proposal to construe ordinary English language and grammar would improperly rewrite the claims. Moreover, Plaintiffs' proposal of construing a term containing ellipses would improperly rewrite the language of the claims and disregard the omitted context and phrasing. IWS contends that the plain and ordinary meaning in the field governs the construction of this term.	'895 Patent: *See, e.g.,* Figs. 7, 8, 12, 13, 14 and 15; 3:47-53, 4:57-63, 14:37-44, 14:52-57, 15:14-21, 16:20-25, and 16:46-54. Extrinsic: *See, e.g.,* 802.3 Standard § 4.1.2.2. *See, e.g.,* IEEE Glossary of Networking Terminology § 3.143. **Rebuttal Evidence:**

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Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
fourth buffer"						Moreover, this phrase should not be construed in its entirety as proposed by Plaintiffs. Rather, only words or terms that an ordinary juror could not understand should be construed. For the purposes of jury comprehension, IWS proposes the following constructions: "collision": The condition where transmissions on a channel overlap, preventing successful transmission. "buffer": A device or storage area used to temporarily store data sent or received over a network. "information packets": *See* above	'895 Patent: *See, e.g.,* Abstract, 4:21-28; 12:49-52; 14:8-20 ("The following description of *an example* of the collision avoidance protocol, with reference to FIGS. 12 to 14, assumes for simplicity and clarity that the master modem 34 *typically* sends s single data frame followed by a control frame downstream, and then waits for a response from the slave modem 32, and that the slave modem waits for these downstream frames and then *typically* sends a response frame followed by s single data frame upstream. It also assumes for simplicity that there is only one slave

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Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
							modem 32 connected to the line 12. Various modifications and extensions of this protocol, for example to accommodate multiple slave modems 32 connected to the same line 12, can be contemplated and some variations are described later below.") (emphasis added); 17:28-44; and 20:15-26. Extrinsic: http://www.merriam-webster.com/dictionary/dependence http://www.merriam-webster.com/dictionary/depend
"control unit"	48	5, 8	30	a unit that performs the necessary conversion between the Ethernet frames and the ECAP data frames, and generates and responds to the ECAP	FIGs. 7, 8, 15; col. 11, line 1 – col. 12, line 62; col. 20, lines 27-65.	IWS contends that the plain and ordinary meaning in the field governs the construction of this term. Moreover, this phrase should not be construed at	**Rebuttal Evidence:** '895 Patent: *See, e.g.,* 5:50-61; 11:1-3 ("FIG. 7

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				control and response frames		all because an ordinary juror can understand all of the words in it, which are ordinary words in the English language.	illustrates *a form* of the master modem 34, including optional but desirable multiplexing for a plurality of two-wire lines.") (emphasis added); 13:64-14:7; 17:63-18:50; and 20:15-26.
"control unit is responsive to control information, from another apparatus coupled to the communications path"		8		the control unit permits the supply of information to the communications path only in response to control information received by the control unit	FIGs. 12-14; col. 8, line 44 – col. 9, line 51; col. 12, line 43 – col. 13, line 63; col. 14, line 8 – col. 16, line 28.	IWS objects to Plaintiffs' proposed terms for construction because Plaintiffs' proposal to construe ordinary English language and grammar would improperly rewrite the claims. IWS contends that the plain and ordinary meaning in the field governs the construction of this term. Moreover, this phrase should not be construed at all because an ordinary juror can understand all of the words in it, which are ordinary words in the English language.	**Rebuttal Evidence:** '895 Patent: *See, e.g.,* Abstract, 4:21-28; 8:44-51 ("FIG. 3 illustrates *a Network access arrangement in accordance with an embodiment* of this invention which is described first below, and also illustrates variations of this which are described subsequently below. In FIG. 3, a TD 14 of a subscriber is again connected to the Network 10 via a two-wire telephone subscriber line 12

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Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
							which *in this arrangement, as in the arrangement of FIG. 1*, is not being used for telephone communications") (emphasis added);11:54-55 ("FIG. 8 illustrates *a complementary form* of a slave modem 32.") (emphasis added).; 12:49-52; 14:8-20; 17:28-44; and 20:15-26.
"half duplex communications" "half duplex manner"	48	5, 8	1, 2, 11, 35, 36 26, 30	The phrases "half duplex communications" and "half duplex manner" in these broader phrases should be construed to mean "form of communication in which communication signals are provided to the communications path so that information is traveling on the communications path in only one direction at any given moment in time".	FIGs. 12-14; col. 9, lines 31-51; col. 12, lines 42-63; col. 13, line 43 – col. 16, line 39. See also: "half duplex." IEEE Standard Dictionary of Electrical and Electronics Terms. 1984. Print.	IWS objects to Plaintiffs' proposed terms for construction because Plaintiffs' proposal to construe ordinary English language and grammar would improperly rewrite the claims. Moreover, Plaintiffs' proposal of construing terms containing ellipses would improperly rewrite the language of the claims and disregard the omitted context and phrasing. IWS contends that the	'895 Patent: *See, e.g.,* 3:47-53, 12:42-52, and 17:22-28 ("It can be appreciated from the description above that the collision avoidance protocol ensures that the modems 34 and 32 operate in a half-duplex manner for communications between them via the line 12, with the total transmission capacity

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Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
					"half-duplex channel." IEEE Standard Dictionary of Electrical and Electronics Terms. 1984. Print. "half duplex." Novell's Dictionary of Networking. 1997. Print.	plain and ordinary meaning in the field governs the construction of these terms. Moreover, these phrases should not be construed in their entirety as proposed by Plaintiffs. Rather, only words or terms that an ordinary juror could not understand should be construed. For the purposes of jury comprehension, IWS proposes the following constructions: "half duplex": Transmission in either direction on a channel, but only in one direction at a time. "information packets": *See* above. If the Court believes a construction of "bidirectionally" is necessary for the purposes of jury comprehension, then IWS proposes:	of the line being shared, preferably dynamically dependent upon buffer fills as described above, between the downstream and upstream directions *of transmission*.") (emphasis added). Extrinsic: *See, e.g.,* IEEE Glossary of Networking Terminology § 3.368. **Rebuttal Evidence:** '895 Patent: *See, e.g.,* Abstract; 3:46-53; 4:21-28; 12:49-52; 14:8-20; 17:28-44; and 20:15-26.

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Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
						"bidirectional" / "bidirectionally": *See* above.	

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Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
"using half duplex communications controlled by the first modem"			1, 35	where the information is travelling on the path in only one direction at a time and under control of the first modem	FIGs. 12-14; col. 9, lines 31-51; col. 12, lines 42-62; col. 13, line 43 – col. 16, line 39; specifically, col. 14, line 65 – col. 15, line 13.	IWS objects to Plaintiffs' proposed term for construction because Plaintiffs' proposal to construe ordinary English language and grammar would improperly rewrite the claims. IWS contends that the plain and ordinary meaning in the field governs the construction of this term. Moreover, this phrase should not be construed in its entirety as proposed by Plaintiffs. Rather, only words or terms that an ordinary juror could not understand should be construed. For the purposes of jury comprehension, IWS proposes the following construction: "half duplex": *See* above.	'895 Patent: *See, e.g.,* 3:47-53, 12:42-52, and 17:22-28 ("It can be appreciated from the description above that the collision avoidance protocol ensures that the modems 34 and 32 operate in a half-duplex manner for communications between them via the line 12, with the total transmission capacity of the line being shared, preferably dynamically dependent upon buffer fills as described above, between the downstream and upstream directions *of transmission*.") (emphasis added). Extrinsic: *See, e.g.,* IEEE Glossary of

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							Networking Terminology § 3.368 **Rebuttal Evidence:** '895 Patent: *See, e.g.,* Abstract; 3:46-53; 4:21-28; 12:49-52; 14:8-20; 17:28-44; and 20:15-26.
"master modem" "slave modem"			26 26	a modem at a first end of the bidirectional communications path that controls how all communications are supplied to the path a modem at a second end of the bidirectional communications path that supplies information to the path only in response to control information received from the master modem	FIGs. 3, 4, 7, 8; col. 8, line 44 – col. 10, line 14; col. 11, lines 1-27; col. 12, line 42 – col. 16, line 39.	IWS contends that the plain and ordinary meaning in the field governs the construction of these terms. For the purposes of jury comprehension, IWS proposes the following constructions: "master modem": A modem having control over other modem(s). "slave modem": A modem which is controlled by a master modem.	'895 Patent: *See, e.g.,* 12:42-52("… the master modem 34 has priority and control over the slave modem 32. Thus the master modem 34 determines when to send information downstream via the line 12, and informs the slave modem when it is permitted to send information upstream via the line 12."); and 17:13-22. Extrinsic:

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							See, e.g., IEEE Glossary of Networking Terminology § 3.503. *See, e.g.,* IEEE Glossary of Computer Terminology §§ 3.239 and 3.2058. **Rebuttal Evidence:** '895 Patent: *See, e.g.,* Abstract; 4:21-28; 11: 1-3 ("FIG. 7 illustrates *a form* of the master modem 34, including optional but desirable multiplexing for a plurality of two-wire lines.") (emphasis added); 11:54-55 ("FIG. 8 illustrates *a complementary form* of a slave modem 32.") (emphasis added); 12:12-27; 14:8-20; 17:28-44; 20:15-26.

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Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
"multiplexing the modem"	12, 20			This phrase is insolubly ambiguous in view of the claims and in the context of the specification and therefore incapable of construction.		IWS objects to Plaintiffs' proposed term for construction because Plaintiffs' proposal to construe ordinary English language and grammar would improperly rewrite the claims. IWS contends that the plain and ordinary meaning in the field governs the construction of this term. Moreover, this phrase should not be construed in its entirety as proposed by Plaintiffs. Rather, only words or terms that an ordinary juror could not understand should be construed. For the purposes of jury comprehension, IWS proposes the following constructions: "multiplexing" / "multiplexed": Techniques for transmitting two or more signals over a channel, such as interleaving transmissions	'895 Patent: *See, e.g.,* 3:47-53 ("The half duplex communications, which can alternatively be considered as time division duplex or *time compression multiplex communications*, avoid collisions or interference between information packets communicated in the two directions of communication on the communications path by ensuring that the communications in the two directions take place at different times.") (emphasis added) and 11:1-53. Extrinsic: *See, e.g.,* IEEE Glossary of Networking Terminology § 3.537.

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Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
						or subdividing a common channel.	*See, e.g.,* IEEE Glossary of Computer Terminology § 3.1399. **Rebuttal Evidence:** '895 Patent: *See, e.g.,* FIGs. 3; 7; 14; 9:52-61; and 14:26-36.
"multiplexing signals of the first modem"			5, 20	The phrase "signals of the first modem" is insolubly ambiguous in the context of the claim and in view of the specification and therefore incapable of construction. To the extent that this phrase is capable of construction, it should be construed as "combining [signals of the first modem] for transmission as a single signal".	FIG. 7; col. 11, line 1 – col. 12, line 41; col 14, lines 21-36. See also: "multiplex." IEEE Standard Dictionary of Electrical and Electronics Terms. 1984. Print. "multiplexing." IEEE Standard Dictionary of Electrical and Electronics	IWS objects to Plaintiffs' proposed term for construction because Plaintiffs' proposal to construe ordinary English language and grammar would improperly rewrite the claims. IWS contends that the plain and ordinary meaning in the field governs the construction of this term. Moreover, this phrase should not be construed in its entirety as proposed by Plaintiffs. Rather, only words or terms that an ordinary juror could not understand should be	'895 Patent: *See, e.g.,* 3:47-53 ("The half duplex communications, which can alternatively be considered as time division duplex or *time compression multiplex communications*, avoid collisions or interference between information packets communicated in the two directions of communication on the communications path by ensuring that

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					Terms. 1984. Print. "multiplexor." IEEE Standard Dictionary of Electrical and Electronics Terms. 1984. Print. "multiplexer." Novell's Dictionary of Networking. 1997. Print. "multiplexing." Novell's Dictionary of Networking. 1997. Print.	construed. For the purposes of jury comprehension, IWS proposes the following constructions: "multiplexing" / "multiplexed": *See* above.	the communications in the two directions take place at different times.") (emphasis added) and 11:1-53. Extrinsic: *See, e.g.,* IEEE Glossary of Networking Terminology § 3.537. *See, e.g.,* IEEE Glossary of Computer Terminology § 3.1399. **Rebuttal Evidence:** '895 Patent: *See, e.g.,* FIGs. 3; 7; 14; 3:47-53 (The half duplex communications, which can alternatively be considered as time division duplex or *time compression multiplex*

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							communications, avoid collisions or interference between information packets communicated in the two directions of communication on the communications path by ensuring that the communications in the two directions take place at different times.) (emphasis added); 11:1-53; and 14:26-36.
"multiplexer . . . for multiplexed connections via respective buffers to respective communication paths"	51			device for combining the information packets received by the first unit from multiple communication paths, each path associated with a connection and buffer in the first unit	FIG. 7; col. 11, line 1 – col. 12, line 41; col 14, lines 21-36. See also: "multiplex." IEEE Standard Dictionary of Electrical and Electronics Terms. 1984. Print. "multiplexing." IEEE Standard Dictionary of	IWS objects to Plaintiffs' proposed term for construction because Plaintiffs' proposal to construe ordinary English language and grammar would improperly rewrite the claims. Moreover, Plaintiffs' proposal of construing a term containing ellipses would improperly rewrite the language of the claims and disregard the omitted context and phrasing. IWS contends that the plain and ordinary meaning	**Rebuttal Evidence:** '895 Patent: *See, e.g.,* FIGs. 3; 7; 14; 3:47-53 (The half duplex communications, which can alternatively be considered as time division duplex or *time compression multiplex communications*, avoid collisions or interference between information packets

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					Electrical and Electronics Terms. 1984. Print. "multiplexor." IEEE Standard Dictionary of Electrical and Electronics Terms. 1984. Print. "multiplexer." Novell's Dictionary of Networking. 1997. Print. "multiplexing." Novell's Dictionary of Networking. 1997. Print.	in the field governs the construction of this term. Moreover, this phrase should not be construed in its entirety as proposed by Plaintiffs. Rather, only words or terms that an ordinary juror could not understand should be construed. For the purposes of jury comprehension, IWS proposes the following constructions: "multiplexing" / "multiplexed": *See* above. "buffers": *See* above.	communicated in the two directions of communication on the communications path by ensuring that the communications in the two directions take place at different times.) (emphasis added); 11:1-53; and 14:26-36.
"MAC-layer packet grouping of data that is grouped to fit into one MAC-layer packet of CSMA/CD networks"			1, 11, 26, 30, 35	This phrase is insolubly ambiguous in the context of the claim and in view of the specification and therefore incapable of construction.		IWS objects to Plaintiffs' proposed term for construction because Plaintiffs' proposal to construe ordinary English language and grammar would improperly rewrite the claims.	'895 Patent: *See, e.g.,* Figs. 2, 9, 10, and 11; 1:26-45, 1:54-60, 3:57-61, 7:19-38, 7:44-65, and 9:24-28. Extrinsic:

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						IWS contends that the plain and ordinary meaning in the field governs the construction of this term. Moreover, this phrase should not be construed in its entirety as proposed by Plaintiffs. Rather, only words or terms that an ordinary juror could not understand should be construed. For the purposes of jury comprehension, IWS proposes the following constructions: "MAC-layer" / "MAC layer": The layer of a network which provides functions between the physical layer and the logical link control layer, including controlling access to the communication channel(s). "packet": A unit of data for transmission over networks of some finite size and which may be	*See, e.g.,* 802.3 Standard § 2.2.1. *See, e.g.,* IEEE Glossary of Networking Terminology §§ 3.510, 3.1566. **Rebuttal Evidence:** '895 Patent: *See, e.g.,* 1:45-60 ("The OSI (Open Systems Interconnection) reference model established by the ISO defines packetized communications protocols in seven layers, of which Layer 1 is the physical layer which is concerned with the physical interfaces between devices and the communications medium, and Layer 2 is the data link layer

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						transmitted over a network by being enveloped in one or more frames. "CSMA/CD": *See* above.	which is concerned with sending and receiving blocks of data together with information for example for synchronization and error and flow control. For LANs, the data link layer is generally considered as comprising two sub-layers, referred to as the LLC (logical link control) layer and the MAC (medium access control) layer. . . . The CSMA/CD Standards address communications at the MAC and physical layers (Layers 2 and 1).") and 16:66-17:40 ("If the fill of the buffer 74 is increasing, then the master modem can simply send a plurality of data frames downstream instead of each single data frame as

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Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
							described above with reference to FIG. 12, before sending the control frame to poll the slave modem for an upstream data frame, thereby increasing the downstream to upstream data frame ratio. Conversely, if the buffer 74 is relatively empty and the buffer 104 is relatively full, the master modem can provide repeated polls for single upstream data frames without sending downstream data frames. . . . The protocol can be refined, from its basic form as described above, in various ways to maximize the efficiency with which the total transmission capacity is used. For example, such refinements can include provisions for

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							sending multiple data frames successively in either direction as described above, concatenating or merging control and/or data frames sent in the same direction, and advancing the timing of downstream frame transmission from the master modem in view of the loop delay on the line 12 (which can be measured in known manner by the master modem) and the knowledge in the master modem control unit 72 of what upstream frames are expected from the slave modem.").
"MAC layer grouping of information on the CSMA/CD path"			41	an Ethernet frame at the MAC layer	1/2/2003 Amendment in '473 patent file history at pp. 20-22.	IWS objects to Plaintiffs' proposed term for construction because Plaintiffs' proposal to construe ordinary English language and grammar would improperly rewrite the claims.	**Rebuttal Evidence:** '895 Patent: *See, e.g.,* 1:45-60 ("The OSI (Open Systems Interconnection)

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						IWS contends that the plain and ordinary meaning in the field governs the construction of this term. Moreover, this phrase should not be construed in its entirety as proposed by Plaintiffs. Rather, only words or terms that an ordinary juror could not understand should be construed. For the purposes of jury comprehension, IWS proposes the following constructions: "CSMA/CD": *See* above. "MAC-layer" / "MAC layer": *See* above.	reference model established by the ISO defines packetized communications protocols in seven layers, of which Layer 1 is the physical layer which is concerned with the physical interfaces between devices and the communications medium, and Layer 2 is the data link layer which is concerned with sending and receiving blocks of data together with information for example for synchronization and error and flow control. For LANs, the data link layer is generally considered as comprising two sub-layers, referred to as the LLC (logical link control) layer and the MAC (medium access control) layer. . . .

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Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
							The CSMA/CD Standards address communications at the MAC and physical layers (Layers 2 and 1).") and 16:66-17:40 ("If the fill of the buffer 74 is increasing, then the master modem can simply send a plurality of data frames downstream instead of each single data frame as described above with reference to FIG. 12, before sending the control frame to poll the slave modem for an upstream data frame, thereby increasing the downstream to upstream data frame ratio. Conversely, if the buffer 74 is relatively empty and the buffer 104 is relatively full, the master modem can provide repeated polls for single

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							upstream data frames without sending downstream data frames. . . . The protocol can be refined, from its basic form as described above, in various ways to maximize the efficiency with which the total transmission capacity is used. For example, such refinements can include provisions for sending multiple data frames successively in either direction as described above, concatenating or merging control and/or data frames sent in the same direction, and advancing the timing of downstream frame transmission from the master modem in view of the loop delay on the line 12 (which can be measured in known manner by the master

Claim Term or Phrase	'895 Patent	'264 Patent	'473 Patent	Plaintiffs' Construction	Plaintiffs' Support[1]	Defendant's Construction	Defendant's Support
							modem) and the knowledge in the master modem control unit 72 of what upstream frames are expected from the slave modem.").
"the half duplex communications are MAC-layer half-duplex such that once information corresponding to a first MAC-layer packet grouping of data has begun to be transmitted into the bidirectional communications path the information corresponding to the first MAC-layer packet grouping of data is completely transmitted into the bidirectional communications path before information			35	once a frame has begun to be transmitted on the communications path, the transmission must be received at the other end of the path before a second frame can be transmitted in the opposite direction on the communications path	FIGs. 12-14; col. 12, lines 43-62; col. 14, line 66 – col. 15, line 13. See also, 1/2/2003 Amendment in '473 patent file history at pp. 20-22.	IWS objects to Plaintiffs' proposed term for construction because Plaintiffs' proposal to construe ordinary English language and grammar would improperly rewrite the claims. IWS contends that the plain and ordinary meaning in the field governs the construction of this term. Moreover, this phrase should not be construed in its entirety as proposed. Rather, only words or terms that an ordinary juror could not understand should be construed. For the purposes of jury comprehension, IWS proposes the following constructions:	**Rebuttal Evidence:** '895 Patent: *See, e.g.,* 1:45-60; 11:1-3 ("FIG. 7 illustrates *a form* of the master modem 34, including optional but desirable multiplexing for a plurality of two-wire lines.") (emphasis added); 11:54-55 ("FIG. 8 illustrates *a complementary form* of a slave modem 32.") (emphasis added); and 16:66-17:40.

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corresponding to a second MAC-layer packet grouping of data is allowed to begin to be transmitted into the bidirectional communications path"						"half duplex": *See* above. "MAC-layer" / "MAC layer": *See* above. "packet": *See* above. If the Court believes a construction of "bidirectional" is necessary for the purposes of jury comprehension, then IWS proposes: "bidirectional" / "bidirectionally": *See* above.	
"changing direction of communication of MAC layer groupings of information … after the completion of transmission of the information corresponding to the first information packet"			40	changing direction of flow of frames on the communications path only after a transmitted frame has been received at the other end of the communications path	FIGs. 12-14; col. 12, lines 43-62; col. 14, line 66 – col. 15, line 13. See also, 1/2/2003 Amendment in '473 patent file history at pp. 20-22.	IWS objects to Plaintiffs' proposed term for construction because Plaintiffs' proposal to construe ordinary English language and grammar would improperly rewrite the claims. Moreover, Plaintiffs' proposal of construing a term containing ellipses would improperly rewrite the language of the claims and disregard the omitted context and phrasing.	**Rebuttal Evidence:** '895 Patent: *See, e.g.,* 1:45-60; 11: 1-3 ("FIG. 7 illustrates *a form* of the master modem 34, including optional but desirable multiplexing for a plurality of two-wire lines.") (emphasis added); 11:54-55 ("FIG. 8 illustrates *a*

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						IWS contends that the plain and ordinary meaning in the field governs the construction of this term. Moreover, this phrase should not be construed in its entirety as proposed by Plaintiffs. Rather, only words or terms that an ordinary juror could not understand should be construed. For the purposes of jury comprehension, IWS proposes the following constructions: "MAC-layer" / "MAC layer": *See* above. "information packet": *See* above.	*complementary form* of a slave modem 32.") (emphasis added); and 16:66-17:40.